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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TALBOT, BRIAN K

ART UNIT PAPER NUMBER

1762

DATE MAILED: 01/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,252

Applicant(s)

IMAI ET AL.

Examiner

Brian K Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-7,11-13 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-7,11-13 and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The amendment filed 10/27/03 has been considered and entered. Claims 2-4,8-10 and 14-16 have been canceled. Claims 19-21 have been added. Claims 1,5-7,11-13 and 17-21 remain in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In light of the amendment to the drawings and attached drawing sheet, the objection to the drawing has been withdrawn.

Claim Rejections - 35 USC § 103

4. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable JP 2000-277887 in combination with JP-2000-187326.

JP 2000-277887 teaches a method of forming a conductive pattern by applying a photosensitive conductive paste to a support and drying to thereby form a film. The paste comprises an organic bonder, a photosensitive organic component, metallic powder and a monool compound, exposing and developing the film to form conductive patterns and then transferring the conductive patterns from the support to a ceramic green sheet (see abstract and paragraph [0048] – paragraph [0054]). The conductive powder can be chosen from a list of powders ([0041-0042]). The photosensitive conductive paste may be either a negative or positive paste

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([paragraph [0056]]). The exposure is by a mercury lamp with light at 20-5000mJ/cm² (paragraph [0050]).

JP 2000-277887 fails to teach a thermosensitive paste as opposed to a photosensitive paste.

JP-2000-187326 teaches a thermosensitive paste as claimed.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified JP 2000-277887 process by incorporating a thermosensitive paste as evidenced by JP-2000-187326 with the expectation of achieving similar success.

Claims 11,12,17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-277887 in combination with JP-2000-187326 further in combination with JP 11-194,493, JP 10-334,732 or JP 10-273,338.

JP 2000-277887 in combination with JP-2000-187326 fails to teach the addition of glass frit in the positive photosensitive paste.

Features described above are incorporated here.

JP 11-194,493, JP 10-334,732 or JP 10-273,338 all teach photosensitive paste for forming conductive patterns whereby a glass frit is included in the composition.

Therefore, it would have been obvious at the time the invention was made to have modified JP 2000-277887 in combination with JP-2000-187326 thermosensitive paste with glass frit as evidenced by JP 11-194,493, JP 10-334,732 or JP 10-273,338 with the advantages associated with its use, i.e. high accuracy, low resistivity, improved bonding, etc.

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Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-277887 in combination with JP-2000-187326 further in combination with JP 06-260381.

Features described above are incorporated here.

JP 2000-277887 in combination with JP-2000-187326 fails to teach directly coating the photosensitive conductive composition on a substrate without using a release film or transfer sheet.

JP 06-260381 teaches applying positive photosensitive coating composition on a substrate, exposing and developing the coating to form a patterned coating.

Therefore, it would have been obvious at the time the invention was made to have modified JP 2000-277887 in combination with JP-2000-187326 process by coating the substrate directly as evidenced by JP 06-260381 because of the expectation of achieving similar success. In addition, the production steps could be reduced and therefore produce a higher throughput for the process by avoiding the steps of coating a transfer sheet and transferring the coating.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-277887 in combination with JP-2000-187326 further in combination with JP 06-260381 still further in combination with JP 11-194,493, JP 10-334,732 or JP 10-273,338.

JP 2000-277887 in combination with JP-2000-187326 further in combination with JP 06-260381 fail to teach the addition of glass frit in the positive photosensitive paste.

Features described above are incorporated here.

JP 11-194,493, JP 10-334,732 or JP 10-273,338 all teach photosensitive paste for forming conductive patterns whereby a glass frit is included in the composition.

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Therefore, it would have been obvious at the time the invention was made to have modified JP 2000-277887 in combination with JP-2000-187326 further in combination with JP 06-260381 photosensitive paste with glass frit as evidenced by JP 11-194,493, JP 10-334,732 or JP 10-273,338 with the advantages associated with its use, i.e. high accuracy, low resistivity, improved bonding, etc.

Response to Amendment

5. Applicant's arguments filed 10/27/03 have been fully considered but they are not persuasive.

Applicant argued that the prior art fails to teach a thermosensitive paste with the claimed chemical formula.

JP-2000-187326 teaches a thermosensitive paste as claimed.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1428.

A handwritten signature in black ink, appearing to read "B. K. Talbot", with a long horizontal flourish extending to the right.

Brian K Talbot
Primary Examiner
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BKT